DOCUMENT RESUME

ED 467 688 UD 035 249

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TITLE	Data-Driven Equity in Urban Schools. ERIC Digest.
INSTITUTION	ERIC Clearinghouse on Urban Education, New York, NY.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO	EDO-UD-02-6
ISSN	ISSN-0889-8049
PUB DATE	2002-09-00
NOTE	4p.; Digest Number 177.
CONTRACT	ED-99-CO-0035
AVAILABLE FROM	ERIC Clearinghouse on Urban Education, Institute for Urban and Minority Education, Box 40, Teachers College, Columbia University, New York, NY 10027. Tel: 800-601-4868 (Toll free); Tel: 212-678-3433; Fax: 212-678-4012; e-mail: eric-cue@columbia.edu. For full text: http://eric-web.tc.columbia.edu/pubget.asp?show=1.
PUB TYPE	ERIC Publications (071) -- ERIC Digests in Full Text (073)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Data Analysis; *Data Collection; *Decision Making; *Educational Equity (Finance); Elementary Secondary Education; Expenditure Per Student; Federal Aid; Minority Group Children; Poverty; *Resource Allocation; *Urban Schools

ABSTRACT

The 2002 reauthorization of the Elementary and Secondary Education Act mandates that schools receiving federal funding must desegregate their student performance data by race, gender, and socioeconomic status in order to provide progress information to the community and state. Data-driven decision making is particularly important in urban schools whose populations are disproportionately poor, minority, and in need of special services. This digest discusses the types of data that schools should collect and the ways to use the information effectively in decision making to enhance equity. It begins by explaining how to use data to enhance quality, then it describes data types (student learning data, student demographics, perceptions data, and school process data). It goes on to explain the disaggregation of data, which allows schools to determine more accurately the effects of programs and strategies on segments of its student body. Finally, this digest explains data-driven decision making and describes how to choose a technology tool to support data-driven decision making (functionality, data storage capacity, training, and format). A sidebar presents data disaggregation tools. Data support resources are listed. (SM)

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ED 467 688

DATA-DRIVEN EQUITY IN URBAN SCHOOLS

ERIC Digest Number 177

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September 2002
EDO-UD-02-6
ISSN 0889-8049

UD 035 249

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DIGEST

Number 176, August 2002 EDO-UD-02-5 ISSN 0889 8049

DATA-DRIVEN EQUITY IN URBAN SCHOOLS

The 2002 reauthorization of the Elementary and Secondary Education Act mandates that schools receiving Federal funding are required to disaggregate their student performance data by race, gender, and socioeconomic status in order to provide progress information to the community and the state. Data-driven decision making is particularly important in urban schools whose populations are disproportionately poor, minority, and in need of special services (Slowinski, 2002). This digest discusses the types of data that schools should collect and the ways to use the information effectively in decision making to enhance equity. It also identifies helpful technological resources.

Data Use to Enhance Equity

Collecting and analyzing meaningful data about the characteristics and academic performance of students, and about school organization and management, helps underresourced, underperforming, and highly diverse schools "identify achievement gaps, address equity issues, determine the effectiveness of specific programs and courses of study, and target instructional improvement" (Lachat, (2002, p. 3). The process helps provide individualized instruction and services to meet the needs of a single student or a specific group of students. It also enables a school continually to monitor the effects of its efforts to determine whether changes are needed. Thus, a school can help ensure the success of the students who most need special supports and who otherwise might not have been noticed.

Data Types

Conducting an overall evaluation to see how the school is doing is a good way to begin data collection. This is often referred to as profiling, a process that helps school administrators, counselors, and teachers explore, discover, and address the individual needs of the school and students (Slowinski, 2002; Wade, 2001). Four basic categories of data are important to collect (Bernhardt, 2001; Lachat, 2002; Slowinski, 2002):

Student Learning Data: These data comprise information on individual students. They include, for example, prior schools attended, courses taken, and achievement; current classroom assessments, grades, standardized test scores, and comparisons among them; diagnostic assessments; programs enrolled in and courses taken (i.e., special education, bilingual education, school-to-career); and participation in projects and extracurricular activities. The resulting longitudinal data provide information about a student over time and identify factors that may have influenced performance (i.e., a school transfer, a change in program). Aggregating student learning data provides a profile of the school, such as the total student group at the top level of achievement or those receiving tutoring.

Student Demographics: These data comprise personal factors about each student: gender, ethnicity, socioeconomic level, language proficiency, and other equity factors. They also comprise characteristics related to a student's schooling, such as attendance and discipline record, and school mobility.

Perceptions Data: These data provide information about perceptions of school personnel, parents, and the community; about the school at large; about the classes; and about specific programs and strategies.

School Process Data: These data provide information about school management, administration, organization, and operations, including the programs the school offers, classroom strategies, and instructional practices.

Data Analysis

Disaggregating the data by breaking them down into smaller elements allows a school to determine more accurately the effects of its programs and strategies on segments of its student body. To conduct an initial equity analysis, for example, the students taking advanced courses can be disaggregated by ethnicity, gender, and socioeconomic status to ascertain the percentage, by group, enrolled in those courses and to consider whether placement decisions are biased or whether the achievement of some groups is routinely lower than that of others (Lachat, 2002).

To determine whether specific programs are not working for certain students, underachieving students, students with excessive absenteeism, and dropouts, data can be disaggregated by courses taken, or even by the teachers who taught them, to consider relevant school influences. The performance of students with similar personal characteristics can be disaggregated to determine which courses, instructional strategies, etc., are most effective with them. Differences between student grades and scores on standardized tests can be reviewed to determine whether there are lags in course content or poor preparation for some types of tests (Lachat, 2002). Finally, item analysis—the process of examining the group of students that missed a particular item on one test or similar items on several assessments—can determine what, if any, factors they have in common, such as the same teacher or limited opportunity to learn the material (Slowinski, 2002).

Data-Driven Decision Making

Disaggregating data uncovers interesting realities that can form essential questions about the reasons for student outcomes and the ways to reverse poor results. These questions should drive the investigation phase that involves, for example, researching best practices and proven programs for students like those of the school. After identifying the programs or program components, and the practices likely to meet the needs of its students, the school is ready to develop an implementation plan. A pilot with a small group can determine unintended consequences as well as the impact of the intervention (Slowinski, 2002).

Choosing a Technology Tool to Support Data-Driven Decision Making

A technology tool is required to manage data flow. Several factors need to be considered in selecting one (Slowinski, 2002):

Data Disaggregation Tools

Ease-e Data Analyzer by TetraData: Is an online tool for data warehousing, mining, analysis, and reporting. Data can be disaggregated and reported by gender, ethnicity, and socioeconomic status. Standards can be created, tracked and analyzed with graphs and reports generated. TetraData also offers a Data Manager tool to assist in the import and export of data from a variety of sources. http://www.ease-e.com/ease-e/products/products_services_analyzer.asp

Goalview: Offers teachers and administrators the ability to set goal, track performance, and report results especially for special needs and Title I students. Includes Goalcard, an individual report of student progress on standards that can be disseminated to teachers and parents; and a database of 250,000 Education Standards and 10,000 Special Education goals to assist in creating goals and IEPs. Provides instructional resources as well as access to Federal and state laws and regulations. http://goalview.school.aol.com/GOALVIEW/index.asp

SchoolNet: Offers a number of web-based tools for data collection and analysis as well as aligning curriculum and instruction to standards. http://www.schoolnet.com

Socrates, by the Center for Resource Management: Offers tools and services to help schools import data, analyze, and ask good questions. Has a capacity of 2 billion pieces of information and allows unlimited import of any electronic data source into a relational data base that can disaggregate data for one-to-one, one-to-many, or many-to-many relationship analyses. http://www.crminc.com/socrates/default.htm

Quality School Portfolio: Is a free data analysis system consisting of two tools: a Data Manager, which allows a school or district to import data, disaggregate the data, and report about the data; and a Resource Kit, which consists of 21 tools to collect data including survey instruments, observation protocols, and questionnaires. Tools can collect information in these areas: Safety & Security, Parent Involvement, Professional Development, Curriculum & Instruction, Technology & Innovation, and Special Programs. QSP can house 8,000 records with 120 variables for 7 years. Data analysis is limited to mean, median, count, percentage, and distributions. Displays are limited to pie charts, tables, bar graphs, cross tabulation, line chart, and histogram. http://qsp.cse.ucla.edu/mainSub/whatSet.html

Source: Slowinski, 2002.

Functionality. At a basic level, a tool should be able to import data from a variety of electronic sources into a relational database that can disaggregate the data. The tool should also be able to generate a report easily through graphs and diagrams of the data and their relationships.

Data Storage Capacity. The technology tool must accommodate the number of students in the district or school and the amount of data collected over the time period determined.

Training. The school needs to ascertain how easily the tool can be learned, whether an individual at the local level will need to commit a significant amount of time to learning and using it, the availability of such an individual, and the cost of training and technical assistance.

Format. Decisions, to some extent based on relative costs, should be made about whether to purchase a tool or outsource its use to a vendor, and where to house the data (at the district or school or with the vendor). Schools also need to consider the format of the tool (i.e., web-based), mode of access (i.e., via the Internet), ease of access of school personnel, and security issues.

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Data Support Resources

Toolbelt, by the North Central Regional Educational Laboratory: Includes a wealth of resources to support data-driven decision making including: data retreat facilitation guide, data tools, planning tools, surveys, check lists, etc.
http://www.ncrel.org/toolbelt/

Data-Driven Implementation Tools: Includes three free tools for K-12 schools to use: School Climate Inventory (SCI), Student Achievement Data, and School Observation Measure.
http://www.serve.org/csrd/datadriven/data.html

Evaluating Whole-School Reform Efforts: A Guide for District and School Staff: Provides an overview of conducting impact and implementation evaluations.
http://www.nwrac.org/whole-school/index.html

Using Data to Improve Student Achievement: Offers several tools to analyze and interpret data that were designed to aid schools in analyzing Kentucky school data, but provide helpful examples for all school personnel.
http://www.kde.state.ky.us/oapd/rsc6/dataanalysis.asp

Disaggregation without Aggravation: Is a multimedia training package for sale from the Southwest Educational Development Laboratory that includes case studies of schools as well as training and facilitation materials.
http://www.sedl.org/pubs/catalog/items/teaching06.html

Using Data to Improve Schools:
http://www.aasa.org/cas/UsingDataToImproveSchools.pdf

American Association of School Administrators' Center for Accountability Solutions: http://www.aasa.org/cas/

Fundamental Assessment Principles for Teachers and School Administrators: Article.
http://ericae.net/pare/getvn.asp?v=7&n=8

The Clearinghouse gratefully acknowledges the contributions of Joseph Slowinski to the preparation of this digest.

This Digest was developed by the ERIC Clearinghouse on Urban Education, with funding from the Office of Educational Research and Improvement, U.S. Department of Education, under contract no. ED-99-CO-0035. The opinions in this Digest do not necessarily reflect the position or policies of OERI or the Department of Education.

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